

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-3 (canceled)

4. (currently amended) A magnetic recording and reading device having a data transfer rate of more than 50 MB/s and a recording density of more than 5 Gb/in<sup>2</sup>, which comprises:

a magnetic recording medium having a substrate and a-at least one magnetic recording layer formed on above the substrate;

a magnetic head enabling the data transfer rate of more than 50 MB/s and the recording density of more than 5 Gb/in<sup>2</sup> on the magnetic recording medium, the magnetic head comprising a recording head having a magnetic core with a magnetic core length l<sub>1</sub> of not more than 35 μm and having a resistivity of more than 50μΩcm, and a reading head provided with a read element having a track width of not more than 0.9 μm; and

a R/W-IC;

wherein the at least one magnetic recording layer contains (1) at least one metal element selected from a first group consisting of Co, Fe and Ni as a primary component, (2) at least two elements selected from a second group consisting of Cr, Mo, W, V, Nb, Ta, Ti, Zr, Hf, Pd, Pt, Rh, Ir and Si, and (3) at least one element selected from a third group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Td, Dy,

Ho, Er, Tm, Yb, Lu, Bi, Sb, Pb, Sn, Ge and B, said at least one element selected from the third group being in an amount of 0.1 to 15 atomic %.

Claim 5 (canceled)

6. (previously presented) A magnetic recording and reading device according to claim 4, wherein the R/W-IC has a line width of not more than 0.35  $\mu\text{m}$ .

7. (previously presented) A magnetic recording and reading device according to claim 10, wherein the recording head has a magnetic pole length  $l_2$  of not more than 50  $\mu\text{m}$ .

8. (currently amended) A magnetic recording and reading device according to claim 4, wherein the at least one magnetic recording layer contains amorphous material.

9. (previously presented) A magnetic recording and reading device according to claim 4, wherein the magnetic recording medium further comprises a non-magnetic intermediate layer containing at least one element selected from the group consisting of Ru, Pt, Cr, Mo, W, V, Nb, Ta, Zr, Hf, Ti, Ge, Si, Co, Ni, C and B.

10. (currently amended) A magnetic recording and reading device according to claim 4, wherein said-the magnetic recording medium has a perpendicular anisotropy magnetic recording layer.

11. (currently amended) A magnetic recording and reading device according to claim 4-10, wherein said-the perpendicular anisotropy magnetic recording layer has a granular structure.

12. (currently amended) A magnetic recording and reading device according to claim 4, wherein said-the magnetic recording medium is a magnetic disk which is rotatable at a speed in a range of more than 10,000 rpm.

13. (currently amended) A magnetic recording and reading device according to claim 4, wherein a magnetic pole of said-the magnetic core is composed of any one material selected from the group consisting of a NiFe-base alloy and an amorphous alloy, said-the NiFe-base alloy including 42Ni-57Fe-1Cr, 46Ni-52Fe-2Cr, 43Ni-56Fe-1Mo, 51Ni-47Fe-2S and 54Ni-43Fe-3P, and said-the amorphous alloy includes CoTaZr and CoNbZr.

14. (currently amended) A magnetic recording and reading device comprising:

a magnetic recording medium having a substrate and a at least one thin magnetic recording layer formed on-above the substrate;

a magnetic head enabling a data transfer rate of more than 50MB/s, and a recording density of more than 5Gb/in<sup>2</sup> on the magnetic recording medium, the magnetic head having a recording head and a reading head; and

a R/W-IC;

wherein the recording head has an upper magnetic core and a lower magnetic core with a magnetic core length  $l_1$  of not more than 35 $\mu\text{m}$ ;

said-wherein the reading head has a read element having a track width of not more than  $0.9\mu\text{m}$ ; and

said-wherein the at least one thin magnetic recording layer includes a magnetic crystal grains containing (1) at least one metal element selected from a first group consisting of Co, Fe and Ni as a primary component, (2) at least two elements selected from a second group consisting of Cr, Mo, W, V, Nb, Ta, Ti, Zr, Hf, Pd, Pt, Rh, Ir and Si, and (3) at least one element selected from a third group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Td, Dy, Ho, Er, Tm, Yb, Lu, Bi, Sb, Pb, Sn, Ge and B, said at least one element selected from the third group being in an amount of 0.1 to 15 atomic %;

~~a data transfer rate of the device is more than 50MB/s, and a recording density is more than 5GB/in<sup>2</sup>.~~

15. (currently amended) A magnetic recording and reading device according to claim 14, wherein said-the  $l_1$  is a length between an air-bearing surface of the magnetic core and a connection which connects the upper magnetic core with the lower magnetic core.

16. (currently amended) A magnetic recording and reading device according to claim 14, wherein said-the RW-IC has a line width of not more than  $0.35\mu\text{m}$ .

17. (currently amended) A magnetic recording and reading device according to claim 14, wherein said-the magnetic recording medium further comprises a non-magnetic intermediate layer containing at least one element

selected from the group consisting of Cr, Mo, W, Ta, V, Nb, Ta, Zr, Hf, Ti, Ge, Si, Co, Ni, C and B.

18. (currently amended) A magnetic recording and reading device comprises:

a magnetic recording medium having a substrate and a thin magnetic layer formed above the substrate;

a magnetic head having a recording head and a reading head; and  
a RW-IC;

wherein said the recording head has an upper magnetic core and a lower magnetic core with a magnetic core length  $l_1$  is of not more than 35  $\mu\text{m}$ ;

wherein said the reading head has a read element having a track width of not more than 0.9  $\mu\text{m}$ ;

wherein an absolute value of normalized noise coefficient per recording density of the magnetic recording medium is not more than  $2.5 \times 10^{-8} (\mu\text{Vrms})(\text{inch})^{0.5}/(\mu\text{Vpp})$ ; and

wherein a data transfer rate of the device is more than 50MB/s, and a recording density is more than 5GB/in<sup>2</sup> 5Gb/in<sup>2</sup>.

19. (currently amended) A magnetic recording and reading device according to claim 18, wherein said the RW-IC has a line width of not more than 0.35  $\mu\text{m}$ .

20. (currently amended) A magnetic recording and reading device according to claim 18, wherein saidthe thin magnetic layer includes magnetic crystal grains.

21. (currently amended) A magnetic recording and reading device according to claim 18, wherein saidthe thin magnetic layer includes amorphous magnetic material.

22. (currently amended) A magnetic recording and reading device according to claim 18, wherein saidthe thin magnetic recording layer is a granular type medium.

23. (previously presented) A magnetic recording and reading device according to claim 18, further comprising a rotary type actuator to position the magnetic head in at least two stages.

24. (new) A magnetic recording and reading device according to claim 4, wherein the at least one magnetic recording layer enables reproduction therefrom.

25. (new) A magnetic recording and reading device according to claim 14, wherein the at least one thin magnetic recording layer enables reproduction therefrom.